

US EPA Region 2 and Puerto Rico Solid Waste Management Authority 2008 Solid Waste Management Conference

- San Juan, Puerto Rico
 - March 26, 2008
 - Lillian Bagus
- Municipal & Industrial Solid Waste Division
 - US EPA Washington, DC



Why Does the Federal Government Recycle?

- Resource Conservation and Recovery Act (RCRA)
- Executive Order 13423



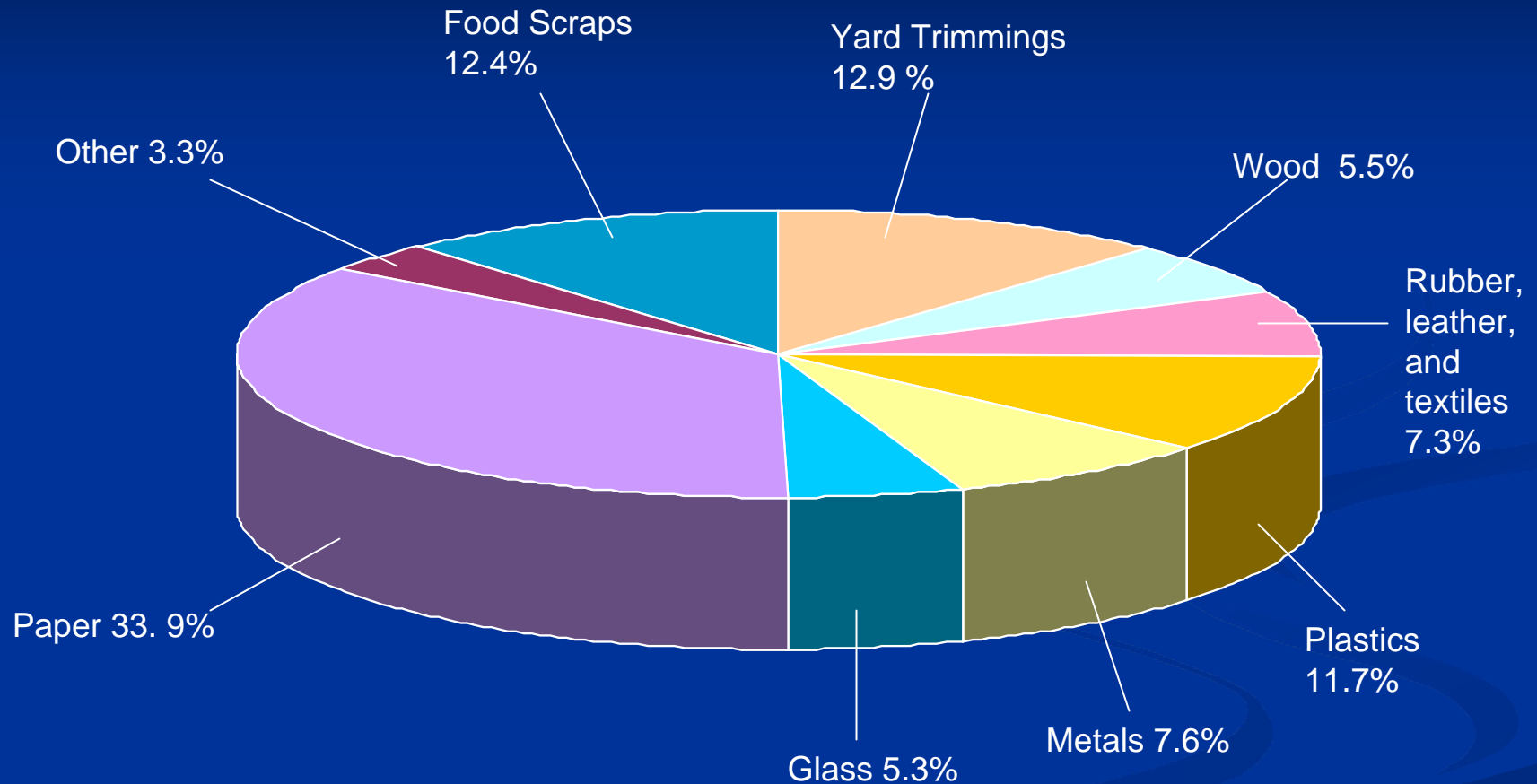
Why Should You Recycle?

- Lots of solid waste to manage
- Environmental considerations
- Environmental benefits
- Economic benefits



Municipal Solid Waste Generation in 2006

251 Million Tons

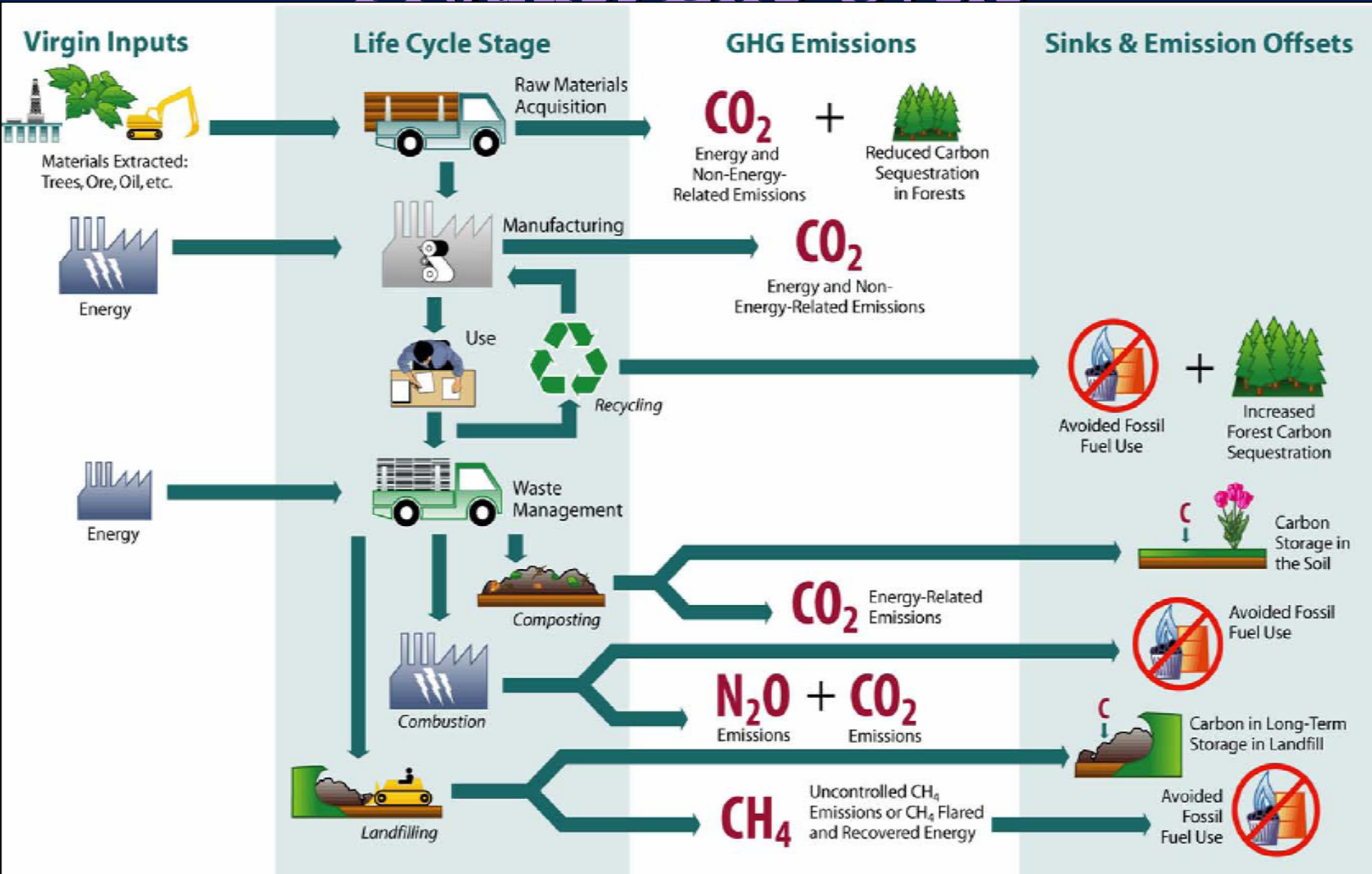


Environmental Considerations

- Products that enter the waste stream have energy impacts and associated GHG emissions at each stage of their life cycle:
- Acquisition of raw materials
- Manufacture of raw materials into products
- Product use by consumers, and
- Product management at end of life.



Product Life Cycle



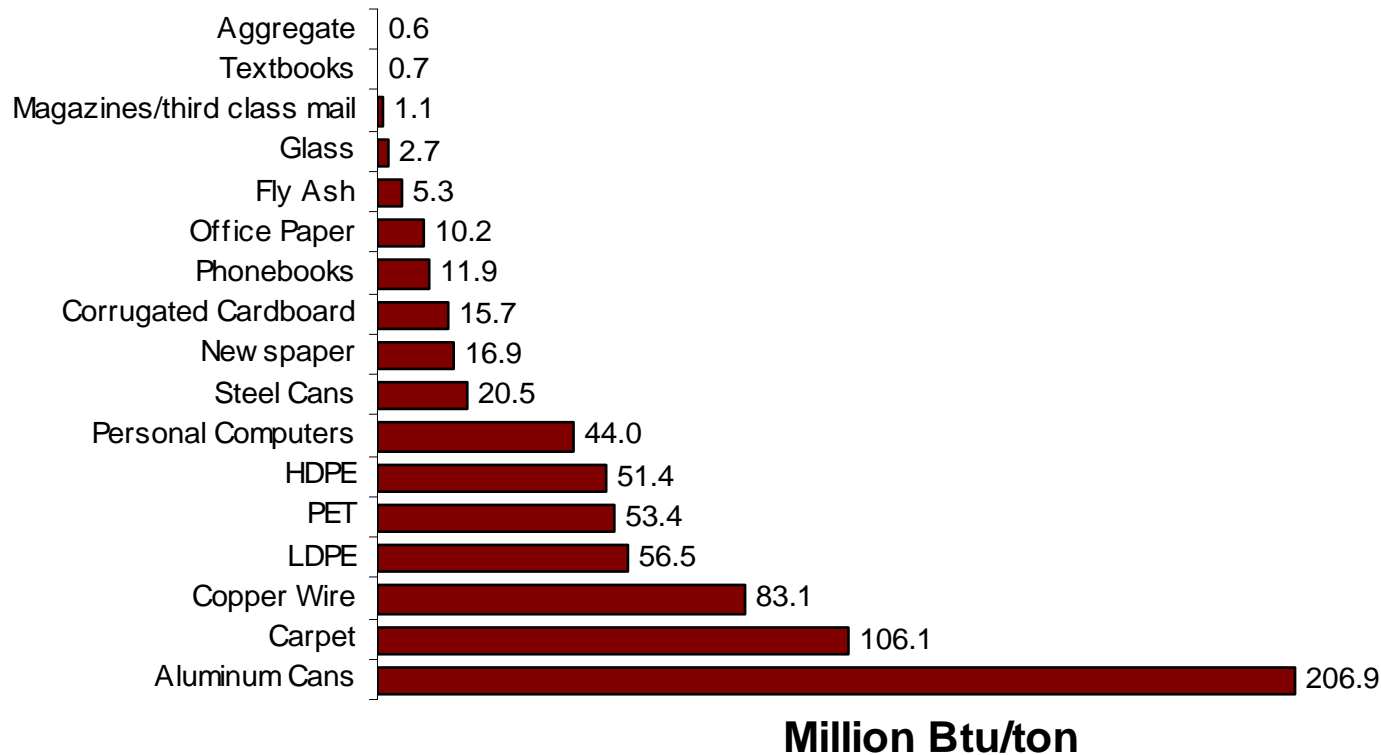
Environmental Benefits of Recycling

- Increase sustainability
- Reduce the quantity of waste
- Save energy
- Use fewer virgin materials
- Reduce greenhouse gas emissions
- Decreased use of landfills



Energy-Waste Connection

**Energy Savings Per Ton Recycled
(Million Btu)**



Economic Benefits of Recycling

- Provides feedstock for industry
- Generates revenues
- Creates jobs
- Cost savings
 - Avoided disposal costs
 - Purchasing savings



Why Recycle? \$\$\$

Scrap prices, as of March 10, 2008:

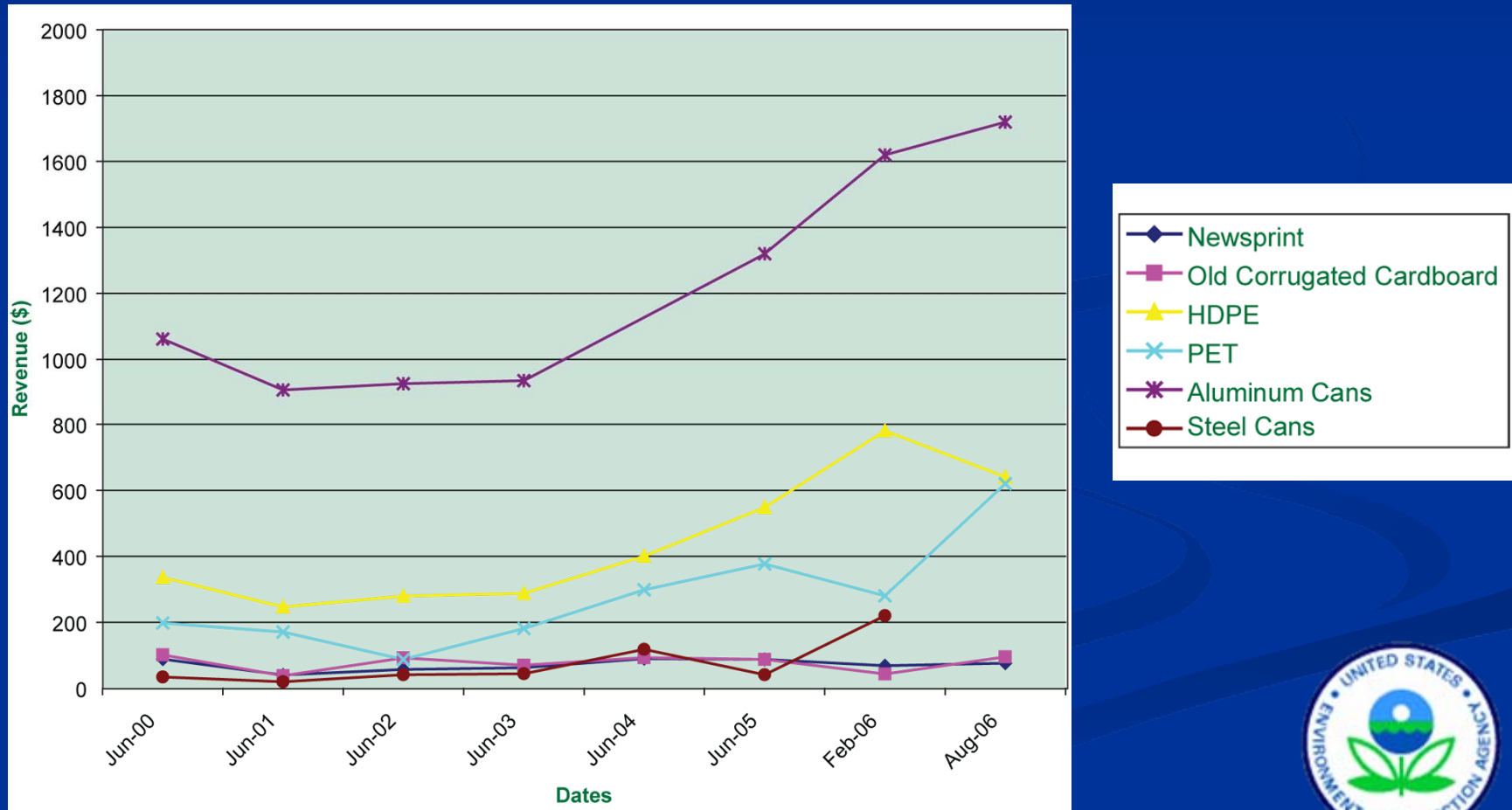
| | <u>\$/ton</u> |
|--|-------------------|
| Glass, mixed bottle scrap | \$ 6.00 |
| Glass, clear bottle scrap | \$ 24.00 |
| Empty aluminum cans, baled | \$2,220.00 |
| Steel can scrap | \$ 108.00 |
| PET, clear scrap, baled | \$ 520.00 |
| HDPE, mixed postconsumer scrap, baled | \$ 380.00 |
| HDPE, clear postconsumer scrap, baled | \$ 540.00 |
| OCC | \$ 69.00 |
| ONP | \$ 53.60 |
| Office Paper | \$ 85.50 |
| Mixed Paper | \$ 18.50 |

Prices quoted are for sorted and prepared materials, packaged and ready for shipment in typical Truck Load quantity weights of 40,000 lbs.



Why Recycle? \$\$\$

Average National Revenues for Recycled Commodities
June 2000 through August 2006



Why Recycle? Jobs

| Type of Operation | Jobs per 10,000 TPY |
|---|---------------------------|
| Product Reuse | |
| Computer Reuse | 296 |
| Textile Reclamation | 85 |
| Misc. Durables Reuse | 62 |
| Wooden Pallet Repair | 28 |
| Recycling-based Manufacturers | 25 |
| Paper Mills | 18 |
| Glass Product Manufacturers | 26 |
| Plastic Product Manufacturers | 93 |
| Conventional Materials Recovery Facilities | 10 |
| Composting | 4 |
| Landfill and Incineration | 1 |

Institute for Local Self Reliance, Waste to Wealth
<http://www.ilsr.org/recycling/recyclingmeansbusiness.html>



Resource Conservation Challenge



<http://www.epa.gov/epaoswer/osw/conserves/index.htm>



RCC: Four Pillars

- Municipal Solid Waste Reduction and Recycling
- Industrial Materials Reduction, Reuse, and Recycling
- Electronics Refurbishment, Reuse, and Recycling
- Priority and Toxic Chemical Reduction

<http://www.epa.gov/epaoswer/osw/consERVE/priorities.htm>



Key Municipal Solid Waste Programs

- Waste Wise
- GreenScapes
- Plug-In to e-Cycling
- Pay As You Throw (PAYT)



WasteWise

- Free, voluntary partnership program
- Helps organizations eliminate costly waste through waste reduction practices
- Provides partners tools, case studies, technical assistance, climate profiles, awards and recognition



WasteWise Partner Accomplishments

Since its inception (1994) WasteWise partners have:

- Reduced more than 123 million tons of waste.
- Prevented the emission of more than 76 million metric tons of carbon equivalent (MTCE)—thereby reducing the impact on global climate change.



GreenScapes

EPA multimedia partnership program to
implement and promote sustainable
landscaping practices

Provides state-of-the-art recommendations

Web-based cost **calculators & resources**

🌐 Multi-media ... continually updated

🌐 Large & Small scale

National Recognition Program & Case Studies



GreenScapes

Environmentally Beneficial Landscaping

The Economic & Environmental Benefits of *GreenScaping*:

- **Reduced**
 - 🌐 water use
 - 🌐 irrigation costs
 - — water & energy
 - 🌐 plant growth
 - 🌐 plant maintenance
 - 🌐 waste generation
 - 🌐 labor – time & cost (maint. & disposal)
 - 🌐 equipment operating times
 - 🌐 equip. maint.
 - 🌐 – labor & supplies
 - <http://www.epa.gov/greenscapes>
- **Reduced**
 - 🌐 fuel use
 - 🌐 emissions
 - 🌐 fertilizer use
 - 🌐 – material & labor savings
 - 🌐 pesticide use
 - 🌐 –material & labor savings
 - 🌐 nonpoint source pollution
 - 🌐 exposure to hazardous materials
 - 🌐 insurance costs



GreenScapes

Environmentally Beneficial Landscaping

Partners

24 electronics manufacturers, retailers and service providers



<http://epa.gov/rcc/plugin/>



Cell Phone Recycling Campaign

- Many existing collection programs, yet less than 20% of cell phones are recycled
- Recycling 100 million cell phones would save enough energy to power more than 194,000 homes with electricity for a year
- Teamed up with leading cell phone manufacturers, service providers and retailers to raise awareness and



Pay As You Throw (PAYT)

- Over 7,000 communities have PAYT programs
- Cost of waste treated like a utility – you pay for what you use
- Recycling increases in PAYT communities
- Waste decreases in PAYT communities



Pay As You Throw

- Economics is the main driver; examples of savings from avoided disposal costs
- Ft. Worth, Texas –around \$7 million
- Worcester, MA – \$1.2 million
- Dover, NH – saved 27% of MSW budget
- Wilmington, NC – \$400,000
- Gainesville, FL – over \$180,000
- San Jose, CA -- \$4 million



Other Efforts

- MSW: Recycling Away from Home, Workplace Recycling
- Industrial Materials Recycling: C2P2
- Comprehensive Procurement Guidelines
- National Partnership for Environmental Priorities (NPEP)





- Encourages recycling infrastructure for away-from-home collection
- Increases the amount of waste collected for recycling
- Promotes a culture of recycling



Workplace Recycling

- Workplaces have 80 to 90% recyclable waste streams.
 - Paper (2 lbs/per person/day)
 - Beverage Containers (3 per person/day)
 - Then all the other opportunities . . .
 - Green procurement: electronics, cleaning supplies, toner cartridges
 - Sustainable landscaping
 - Water



EPA's Coal Combustion Products Partnership (C2P2)

- Cooperative effort among several Federal agencies and industries
- Focus is to increase recycling/beneficial use of coal combustion products (CCPs)
- Uses include concrete/concrete products, structural fills/embankments, wallboard, waste stabilization, blasting, grit, soil modification and stabilization, and aggregate.
- Often results in cost savings.



Comprehensive Procurement Guidelines

- RCRA requires EPA to designate products made with recovered materials
- Any agency that spends more than \$10,000/year of Federal money on a designated item, must purchase that item made with recovered materials
- 61 products designated





NPEP

NPEP is part of EPA's National Waste Minimization Program and the Resource Conservation Challenge (RCC)

EPA has established a National Waste Minimization Goal:
To reduce the use or release of 4 million pounds of priority chemicals by 2011.

Other partnership opportunities include:
Voluntary reductions in Priority Chemicals


National Environmental Performance Track
The Mercury Challenge

<http://www.epa.gov/epaoswer/hazwaste/minimize/npep/index.htm>



Benefits

■ *Recognition and Awards*

- Enrollment plaque
- Achievement awards
- Use of NPEP logo 
- Publication of success story
- Press events (if desired)

■ *NPEP Team Support Services*

- Waste minimization site visits
- Source reduction strategy development
- Technical information/resources
- Education/workshops

■ *National Environmental Performance Track*

- Source reduction of **PCs** qualify as two of the four commitments necessary to join Performance Track



Opportunities For Municipalities to Reduce Priority Chemicals

- Switch to higher efficiency, low mercury bulbs, and recycle your spent fluorescent lamps
- Recycle your lead wheel weights and replace them with steel alternatives
- Only use pesticides as needed and switch to safer alternatives
- Many meters, pumps, and gauges have mercury-containing switches. Retire them early and replace them with the mercury-free alternatives.



Many Tool Kits & Calculators

- Are available
 - Office Calculator (NEW)
 - Municipal Tool Kit (NEW)
 - WaRM Model Results
 - WasteWise Program
 - Paper Website (NEW)



Thanks!

